

Application No. : 10/727,348
Amdt. Dated : June 7, 2005
Reply To O.A. Of : March 7, 2007

REMARKS

The Applicant thanks the Examiner for his careful and thoughtful examination of the present application. By way of summary, Claims 1-17 were pending in this application. In the present amendment, the Applicant have submitted formal drawings, canceled Claim 17 without prejudice or disclaimer, and added new Claim 18. Accordingly, Claims 1-16 and 18 remain pending for consideration.

Allowable Subject Matter - Claims 1-10 and 15

The Applicant also thanks the Examiner for the allowance of Claims 1-10 and the indication of allowable subject matter in Claim 15.

Examiner's Statement of Reasons for Allowance

The Applicant respectfully disagrees with the Examiner's Statement of Reasons for Allowance to the extent that not all the claims include each of the structures or method steps recited in the Examiner's Statement. Also, the Applicant respectfully disagrees with the Examiner's Statement to the extent that there is any implication that the patentability of any claim rests on the recitation of a single feature because it is the combination of features recited in each claim that makes that claim patentable.

Response To Drawing Objections

The Applicant is submitting herewith Formal Drawings. The Applicant respectfully submits that no new matter is introduced by the Formal Drawings, and therefore, the Applicant respectfully requests withdrawal of the objection to Fig. 11.

Rejection Of Claim 11 Under 35 U.S.C. § 102(a)

The Office Action rejected Claim 11 under 35 U.S.C. § 102(a) as being anticipated by U.S. patent publication number US20030073890A1, issued to Hanna (the Hanna publication). The Applicant respectfully traverses this rejection because the Hanna publication patent fails to identically teach every element of the claim. See

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M.P.E.P. § 2131 (stating that in order to anticipate a claim, a prior art reference must identically teach every element of the claim).

For example, independent Claim 11 recites:

11. A method of determining a measure of a patient's blood oxygen saturation, the method comprising:
receiving data corresponding to a plurality of photoplethysmographs;
encoding each of the plurality of photoplethysmographs as a complex signal;
combining the plurality of complex signals into complex numbers; and
determining values of a measure a patient's blood oxygen saturation from the complex numbers.

Non-limiting examples of the encoding of each of the signals into a complex signal and the combination of the complex signals into complex numbers is disclosed at least with respect to the Applicant's Figs. 5, 5A, 8, and 11. As highlighted in the discussion of exemplary Fig. 11, the complex combination can be derived from a complex signal representing each of the photoplethysmograph signals (such as, for example, the Red and Infrared signals). This exemplary combination provides a rich amount of information as it comprises a complex ratio (such as, for example, a ratio usable to determine a saturation value) encoded as a function time that also includes phase information.

The present Office Action alleged, among other things, that "Hanna teaches . . . encoding each of the plurality of photoplethysmographs as a complex signal and combining the plurality of complex signals into complex numbers (paragraphs 0011 and 0036)" See page. 3, heading no. 2, paragraph no. 2. However, the Applicant submits that Hanna's Fig. 2, item 110, paragraphs 0011 and 0036, and in particular, paragraph no 0037, all teach

The complex signal vector S is formed by treating the first plethysmographic signal S_1 as the real component of the complex signal vector S and treating the second plethysmographic signal S_2 as the imaginary component of the complex signal vector S (i.e., $S=S_1+iS_2$). In this regard, exemplary complex signal vectors S formed from infrared and red plethysmographic signals S_1 and S_2 at a particular instant in time

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Thus, in contrast to the Applicant's disclosure, the Hanna publication teaches only that a complex representation can be formed by encoding one intensity signal (S_1) as a real part of a complex number, and the other intensity signal (S_2) as the imaginary part of the same complex number ($S=S_1+iS_2$).

Based on at least the foregoing, the Applicant submits that the Hanna publication patent fails to identically teach or suggest every element of the claim. Accordingly, the Applicant requests withdrawal of the rejection of Claim 11 based on the Hanna publication.

Rejection Of Claims 12-14 and 16 Under 35 U.S.C. § 103

The Office Action rejected Claims 12-14 and 16 under 35 U.S.C. § 103 as being unpatentable over the Hanna publication in view of U.S. patent no. 5,553,615, issued to Carim et al. (the Carim patent). The Applicant respectfully traverses this rejection because the Hanna publication, alone or in combination with the Carim patent, fails to teach or suggest the elements of the claims. See M.P.E.P. § 2143 (stating that in order to establish a *prima facie* case of obviousness for a claim, the prior art references must teach or suggest all the claim limitations).

As discussed in the foregoing, the Hanna publication fails to teach or suggest the elements of independent Claim 11. Moreover, the Applicant is having difficulty seeing any discussion or disclosure of use of the complex domain in the Carim patent. Thus, the Applicant submits that even if the Carim patent can be combined with the Hanna publication, which is not conceded, the combination still fails to teach or suggest the elements of independent Claim 11. Accordingly, the combination of the Hanna publication and the Carim patent also fails to teach or suggest dependent Claims 12-14 and 16, which each depend from independent Claim 11, for the same reasons articulated above with respect to Claim 11, and because of the additional features recited therein.

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New Claim 18

New Claim 18 has been added to more fully define the Applicant's claimed subject matter and is fully distinguished over the prior art of record.

Request For Telephone Interview

In view of the forgoing, the present application is believed to be in condition for allowance, and such allowance is respectfully requested. If further issues remain to be resolved, the Applicant's undersigned attorney of record hereby formally requests a telephone interview with the Examiner. The Applicant's attorney can be reached at (949) 721-2946 or at the number listed below.

In addition, please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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